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STATE OF COLORADO

Roy Romer, Governor
Patti Shwayder, Acting Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

HAZARDOUS MATERIALS AND WASTE MANAGEMENT DIVISION

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Colorado Department
of Public Health
and Environment

August 9, 1995

Steve Slaten
IAG Project Coordinator-ER
Department of Energy
Rocky Flats Office
P O Box 928
Golden CO 80402-0928

RE: Closure Plans and Public Notices for Operable Units 11 and 15

Dear Mr Slaten

The Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division (the Division) has opened simultaneous public comment periods on the closure plans for Operable Units 11 and 15 beginning today, August 9 and running through September 8, 1995 A public notice has been placed in a Denver newspaper and has also been mailed to a list of interested parties The Division will notify you of any comments received during this period These comment periods should run concurrently with efforts to finalize the CAD/RODs for both Operable Units Copies of the closure plans and public notices are enclosed

If you have any questions regarding these closure plans, please contact Carl Spreng at 692-3358

Sincerely,

Joe Schieffelin
Rocky Flats Unit Leader
Hazardous Waste Control Program

cc Dave George, DOE
Bill Fitch, DOE
Steve Hahn, K-H
Dennis Schubbe, RMRS
Dan Booco, EG&G
Martin Hestmark, EPA
Bonnie Lavelle, EPA
Mark Aguilar, EPA
Laura Perrault, AGO
Steve Tarlton, RFPU

INTERIM STATUS CLOSURE PLAN
FOR
OPERABLE UNIT 11 WEST SPRAY FIELD

PURPOSE

The intent of this Closure Plan is to provide a description of the closure process for one interim status closure unit at the Department of Energy's Rocky Flats Environmental Technology Site (Rocky Flats) This plan addresses requirements contained in 6 CCR 1007-3 Section 265, Subpart G - Closure and Post-Closure

Closure of hazardous waste treatment and storage units are to be conducted in accordance with the closure performance standard contained in 6 CCR 1007-3 Section 265 111 This standard requires the Department of Energy to close these interim status unit in a manner which

1 Minimizes the need for further maintenance, and

2 Controls, minimizes or eliminates, the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to ground or surface waters or to the atmosphere, and

3 Complies with all other appropriate closure requirements contained in Part 265

The specific requirements and responsibilities for cleanup activities at Rocky Flats are outlined in the Interagency Agreement (IAG) between the Department of Energy (DOE), the Environmental Protection Agency (EPA) and the Colorado Department of Public Health and Environment (CDPHE) Interim status closure units have been designated in the IAG as Individual Hazardous Substance Sites (IHSSs) One IHSS, IHSS 168, comprises Operable Unit (OU) 11

DESCRIPTION OF CLOSURE UNIT

The one interim status closure unit in OU 11 is located within the Rocky Flats buffer zone (see Figure 1) The following is a summary of the physical description and operational history of the closure unit

IHSS 168 - WEST SPRAY FIELD. IHSS 168 is an undeveloped area of approximately 105 acres located in the western Rocky Flats buffer zone From April 1982 through October 1985, IHSS 168 was used for the periodic spray application of excess liquids from Solar Evaporation Ponds 207-B North and 207-B Center The source of these liquids were effluents from the Sewage Treatment Plant and ground water collected in the Interceptor Trench System These liquids contained elevated levels of nitrates, metals, radionuclides, volatile organic compounds and semivolatile organic compounds

REMOVAL OF HAZARDOUS WASTE INVENTORY

There are and will be no containers of waste in treatment or storage at IHSS 168 during closure, therefore, there is no inventory to be removed

SAMPLING AND ANALYTICAL METHODS

The methods used to sample and analyze for RCRA hazardous constituents and radiological contamination are described in detail in the Final Phase I RCRA Facility Investigation/Remedial Investigation (RFI/RI) Work Plan and Revised Field Sampling Plan for OU 11 At IHSS 168 three types of samples were collected and analyzed

1 surficial soil samples for radionuclides, metals and nitrates
2 subsurface geologic materials samples for radionuclides, metals, nitrates, volatile organic compounds and semivolatile organic compounds
3 ground water samples for radionuclides, metals, nitrates, volatile organic compounds and semivolatile organic compounds

RCRA clean closure is based on the results of the CDPHE Conservative Screen The CDPHE Conservative Screen methodology consists of six steps

1 identify Potential Contaminants of Concern (PCOCs)
2 plot the occurrence of PCOCs to identify "source areas"
3 for each PCOC calculate a risk-based concentration (RBC) the basis for the RBCs used was a one in one million carcinogenic risk and a non-carcinogenic hazard index of one, under a residential use scenario
4 identify the maximum concentration of a PCOC in each media (soils, air, and water)
5 divide the maximum PCOC concentration by the RBC and sum by media
6 compare the ratio sums to the decision criteria a ratio sum less than one indicates a low-hazard site requiring no action, a ratio sum between one and 100 indicates a risk assessment should be completed, and a ratio sum greater than 100 indicates a voluntary corrective action may be undertaken

The IHSS 168 PCOCs identified by the screening process were nitrate/nitrite, tritium, plutonium-239/240, and americium-241 The concentrations of these PCOCs are very low resulting in a ratio sum less than one The results show that IHSS 168 is a low hazard site requiring no action, and poses no current or potential threat to human health or the environment

DECONTAMINATION

The results of the sampling performed at IHSS 168 have been reported in the Combined Phases RFI/RI Report The report concludes that the IHSS has met the RCRA closure performance standards Therefore, no additional decontamination is necessary

ADDITIONAL ACTIONS TO ASSURE COMPLIANCE

In accordance with Section I.B 11 b of the IAG, additional action at IHSS 168 may be required to address all hazardous substance source areas with risk levels greater than one in a million evaluated at the source. Because the CDPHE Conservative Screen risk calculation determined that risk levels are below one in a million, no additional actions are necessary

CERTIFICATION OF CLOSURE

As required in 6 CCR 1007-3 Section 265 115, certification of closure requirements must be submitted to CDPHE This certification is provided by the owner/operator of the facility and by an independent registered professional engineer and assures that the IHSS has been closed in accordance with the specifications contained in or referenced by this closure plan

CLOSURE SCHEDULE

The investigation objectives and proposed sampling and analysis methods were submitted as the Final Phase I RFI/RI Work Plan on January 2, 1992, the results of the investigation were submitted as the Final Combined Phases RFI/RI Report on June 9, 1995 The remaining schedule for the closure of IHSS 168 consists of the submittal of the Final Corrective Action Decision/Record of Decision (CAD/ROD) by September 29, 1995

FINANCIAL ASSURANCE

Federal government facilities are exempt from the financial requirements imposed by Subpart H of CHWA, Section 265 140(c) Because Rocky Flats is a federally-owned facility, no cost estimate or financial assurance documentation is required

ADDITIONAL INFORMATION

The RFI/RI Work Plan, RFI/RI Report, Proposed Plan and other documents contain data pertinent to the closure of the IHSS 168 and are available at the information repositories at the following locations

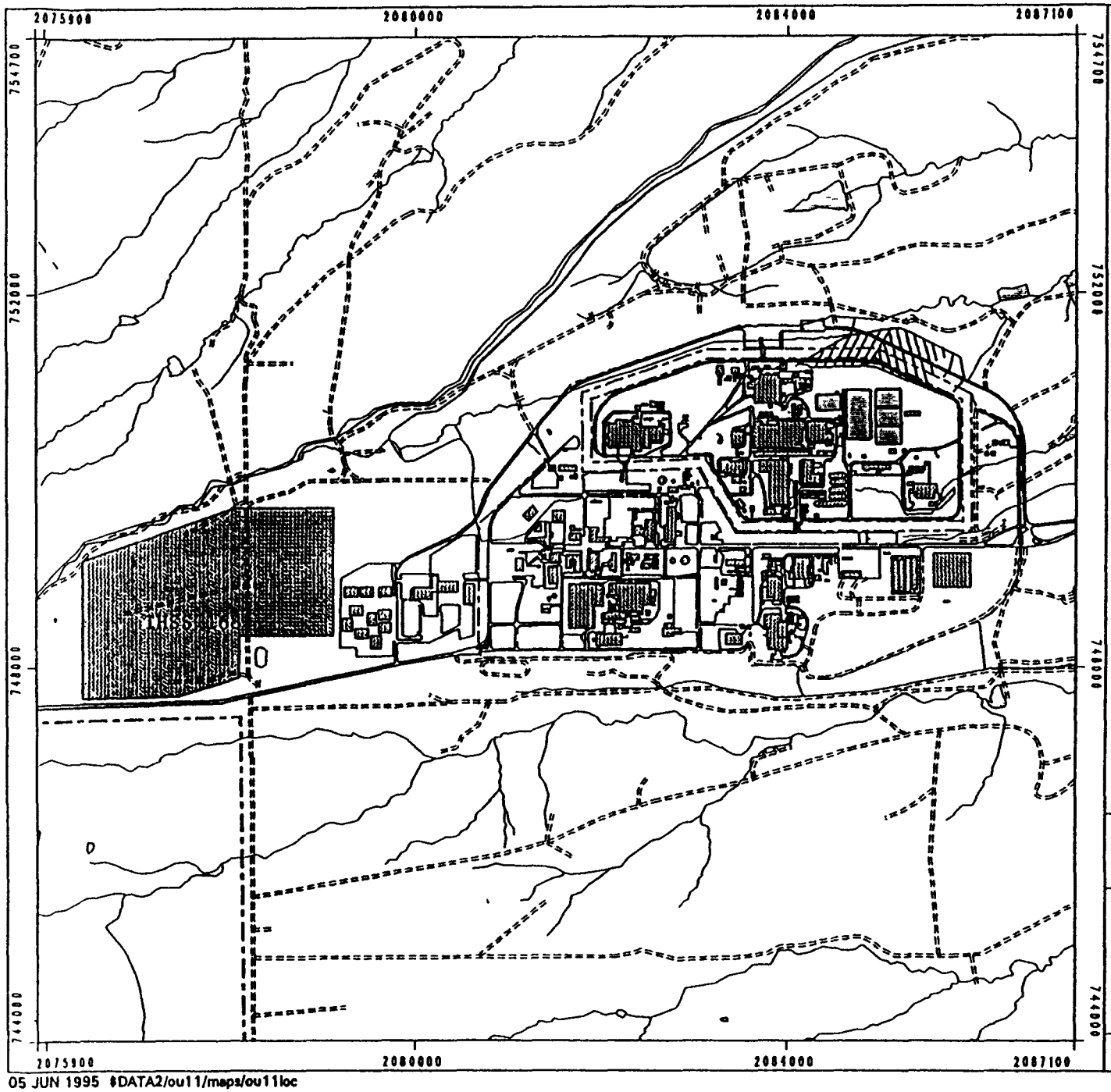
Rocky Flats Public Reading Room
Front Range Community College
Level B
3645 W 112th Avenue
Westminster CO 80030

Colorado Department of Public
Health and Environment
Hazardous Materials and Waste
Management Division - Bldg B2
4300 Cherry Creek Drive South
Denver CO 80222-1530

Citizens Advisory Board
9035 N Wadsworth Parkway
Suite 2250
Westminster CO 80021

Standley Lake Library
8485 Kipling Street
Arvada CO 80005

U S Environmental Protection Agency
Superfund Records Center
5th Floor
999 18th Street
Denver CO 80202-2466



EXPLANATION

- Interceptor Trench System
- Streams and Drainages
- Paved Roads
- Dirt Roads
- Security Fences
- Rocky Flats Boundary
- OU 11 (IHSS 168)
- Lakes and Ponds
- Buildings and Trailers

Scale = 1 19200
1 Inch = 1600 feet

800 0 1600ft

State Plane Coordinate Projection
Colorado Central Zone
Datum NAD27

U S Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

Location Map

Final Combined Phases
RFI/RI Report

Operable Unit 11

June 1995

Figure 1

05 JUN 1995 $DATA2/ou11/maps/ou11loc

INTERIM STATUS CLOSURE PLAN
FOR
OPERABLE UNIT 15· INSIDE BUILDING CLOSURES

PURPOSE

The intent of this Closure Plan is to provide a description of the closure process for six interim status closure units at the Department of Energy's Rocky Flats Environmental Technology Site (Rocky Flats) This plan addresses requirements contained in 6 CCR 1007-3 Section 265, Subpart G - Closure and Post-Closure

Closure of hazardous waste treatment and storage units are to be conducted in accordance with the closure performance standard contained in 6 CCR 1007-3 Section 265 111 This standard requires the Department of Energy to close these interim status units in a manner which

1 Minimizes the need for further maintenance,
2 Controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to ground or surface waters or to the atmosphere, and
3 Complies with all other appropriate closure requirements contained in Part 265

The specific requirements and responsibilities for cleanup activities at Rocky Flats are outlined in the Interagency Agreement (IAG) between the Department of Energy (DOE), the Environmental Protection Agency (EPA) and the Colorado Department of Public Health and Environment (CDPHE) Interim status closure units have been designated in the IAG as Individual Hazardous Substance Sites (IHSSs) Six IHSS, located inside buildings comprise Operable Unit (OU) 15

DESCRIPTION OF CLOSURE UNITS

The six interim status closure units in OU 15 are located within four buildings in the Industrial Area at Rocky Flats (see Figure) The following is a summary of the physical description and operational history of the closure unit

IHSS 178, Building 881, Drum Storage Area (Room 165). IHSS 178, which has a maximum storage capacity of five 55-gallon drums, was first used in 1953 when Building 881 operations began The drums stored in the IHSS contained wastes contaminated with solvents and possibly low-level radioactivity Thirty radiological smear samples were collected from the IHSS as well as three hot water rinsate samples which were obtained from the IHSS, perimeter, and pathway areas Final radiological surveys at each of the 30 initial smear sample locations were performed No RCRA-regulated constituents of regulatory concern were identified in the IHSS sampling Also, none of the data collected during the CERCLA evaluation with respect to radionuclides and beryllium exceeded the screening criteria Currently IHSS 178 is used as a 90-day accumulation area

IHSS 179, Building 865, Drum Storage Area (Room 145). IHSS 179, which has a maximum storage capacity of ten 55-gallon drums, was first used for drum storage in 1970 The dimensions of the IHSS are approximately 8 feet by 12 feet Drums stored in the IHSS contained oils, chlorinated solvents, low-level radioactive waste and possibly beryllium Twenty-three radiological and beryllium smear samples were collected from the IHSS and three hot water rinsate samples were obtained from the IHSS, perimeter, and pathway areas Final radiological surveys at each of the 23 initial smear sample locations were performed No RCRA-regulated contaminants were identified in the IHSS sampling, none of the data collected during the CERCLA evaluation with respect to radionuclides and beryllium exceeded screening criteria

IHSS 180, Building 883, Drum Storage Area (Room 104) IHSS 180, which has a maximum storage capacity of thirty 55-gallon drums, measures 10 feet by 16 feet and was first used for drum storage in 1981 Drums stored in the IHSS contained oils contaminated with solvents, uranium and beryllium Forty-nine radiological and beryllium smear samples were collected from the IHSS and four hot water rinsate samples were obtained from the IHSS, perimeter, and pathway areas Final radiological surveys at each of the 49 initial smear sample locations were performed No RCRA-regulated constituents of regulatory concern were identified in the IHSS sampling The data collected during the CERCLA evaluation did not detect radionuclides in the hot water rinsate samples above permissible levels and none of the post-rinsate smear samples exhibited total alpha or beta activity exceeding permissible levels However, seven of the sampling areas surveyed for beta dose-rate exceeded the established screening criteria limit of 2 5 mrem/hour An evaluation based on occupational exposure showed total effective dose equivalents below 5 rem/year

IHSS 204, Building 447, RCRA Unit 45, Original Uranium Chip Roaster (Rooms 32 and 502). IHSS 204, the Original Uranium Chip Roaster, was used historically to oxidize uranium chips coated with small amounts of oils and coolants (Freon TF and 1,1,1-trichloroethane), converting the elemental uranium to uranium oxide The unit is cylindrical with a diameter of 5 feet 6 inches and a height of 7 feet 4 inches The inlet for the unit is located in Room 502 and the outlet is located directly downstairs in Room 32 Depleted uranium chips were fed into this unit at a maximum rate of 3 drums per day No hazardous constituents have been treated in this unit since January 1988, when the uranium chips processed in the unit ceased to be coated with oils and coolants A total of seventy-seven radiological smear samples were collected from the IHSS (rooms 31, 32, 501, and 502, chip roaster, and wash rack/drum washing basin in room 501) Seven hot water rinsate samples were obtained from the IHSS No RCRA-regulated constituents of regulatory concern were identified in the IHSS sampling The prerinsate smear samples from the floor surfaces in Rooms 32 and 502 and the outside surfaces of the Chip Roaster inlet and outlet confirmed the presence of radiological contamination at IHSS 204 Rooms 32 and 502 are posted and managed as radiological areas

IHSS 211, Building 881, RCRA Unit 26, Drum Storage Area (Room 266B). IHSS 211, which has a maximum storage capacity of twenty-nine 55-gallon drums, was first used as a drum storage area in 1981 Since May 6, 1989, IHSS 211 has been operating as a RCRA 90-day accumulation area The dimensions of the IHSS are approximately 10 feet by 20 feet The wastes stored in the unit have historically included low-level radioactive combustibles (rags, wipes, etc), metals, glass and materials which contained solvents and/or metals generated by laboratories in the building Thirty-two radiological smear samples were collected from the IHSS and three hot water rinsate samples were obtained from the IHSS, perimeter, and pathway areas Final radiological surveys at each of the 32 initial smear sample locations were performed No RCRA-regulated contaminants were identified in the IHSS sampling Also, none of the data collected during the CERCLA evaluation with respect to radionuclides exceeded the screening criteria

IHSS 217, Building 881, RCRA Unit 32, Cyanide Bench Scale Treatment (Room 131C). IHSS 217 consists of a 4 feet by 5 feet painted metal fume hood and laboratory table, three 4-liter polyethylene bottles, a glass beaker and a chlorine-specific ion electrode The laboratory table and fume hood were originally installed in 1952 The unit was used as a bench-scale treatment process to convert cyanide to cyanate Thirteen radiological smear samples and one hot water rinsate sample were collected from the IHSS Final radiological surveys at each of the initial smear sample locations were performed No RCRA-regulated constituents of regulatory concern were identified in the IHSS verification sampling Also, none of the data collected during the CERCLA evaluation with respect to radionuclides exceeded the screening criteria

REMOVAL OF HAZARDOUS WASTE INVENTORY

There are and will be no containers of waste in treatment or storage for more than 90 days at the six IHSSs during closure, therefore, there is no inventory to be removed

SAMPLING AND ANALYTICAL METHODS

The methods used to sample and analyze for RCRA hazardous constituents and radiological contamination are described in detail in the Final Phase I RCRA Facility Investigation/ Remedial Investigation (RFI/RI) Work Plan Sampling grids were established for each IHSS and three types of samples were collected and analyzed

1 surficial soil samples for radionuclides, and beryllium analysis,
2 hot water rinsate samples for TCL volatile organics, TCL semi-volatile organics, and TAL metals analysis, and
3 radiation surveys for fixed radionclide constituents

RCRA clean closure is based on comparison of the hot water rinsate analyses to performance standards established for the used rinsate

1 There must be no detectable levels of hazardous organic constituents,
2 It must not exhibit any characteristics of a hazardous waste as defined in 6 CCR 1007-3 Part 261, Subpart C, and
3 The levels of Toxicity Characteristic (TC) metals must be at or below the background level in the unused rinsate solutions

Parameter selection for the used rinsate analysis were based on the specific waste stored at the IHSS

DECONTAMINATION

The results of the sampling performed at these six units have been reported in the Phase I RFI/RI Report for OU15 The report concludes that the IHSSs have met the RCRA clean closure performance standards Therefore, no additional decontamination is necessary

ADDITIONAL ACTIONS TO ASSURE COMPLIANCE

In accordance with Section I B 11 a of the IAG, additional action at an IHSS within OU15 may be required if

1 There has been a release of hazardous constituents or hazardous substances to the environment external to the IHSS or
2 There is a threat of post-closure escape of hazardous waste, hazardous constituents, run-off, hazardous waste decomposition products, or hazardous substances

In addition to samples collected from surfaces within the IHSSs, sampling was also conducted in perimeter and pathway areas The RFI/RI investigation determined that no contamination from wastes stored or treated at the IHSSs had migrated out of an IHSS and so no additional actions are necessary in order to satisfy the closure performance standards

CERTIFICATION OF CLOSURE

As required in 6 CCR 1007-3, Section 265 115, certification of closure requirements must be submitted to CDPHE This certification is provided by the owner/operator of the facility and by an independent registered professional engineer and assures that the IHSSs have been closed in accordance with the specifications contained in or referenced by this closure plan

CLOSURE SCHEDULE

The investigation objectives and proposed sampling and analysis methods were submitted as the Final Phase I RFI/RI Work Plan on October 26, 1992, the results of the investigation were submitted as the Final Phase I RFI/RI Report on December 19, 1994 The remaining schedule for the closure of OU15 consists of the submittal of the final Corrective Action Decision/Record of Decision (CAD/ROD) by September 29, 1995

FINANCIAL ASSURANCE

Federal government facilities are exempt from the financial requirements imposed by Subpart H of CHWA, Section 265 140(c) Because Rocky Flats is a federally-owned facility, no cost estimate or financial assurance documentation is required

ADDITIONAL INFORMATION

The RFI/RI Work Plan, RFI/RI Report, Proposed Plan and other documents contain data pertinent to the closure of the OU15 IHSSs and are available at the information repositories at the following locations

Rocky Flats Public Reading Room
Front Range Community College
Level B
3645 W 112th Avenue
Westminster CO 80030

Colorado Department of Public
Health and Environment
Hazardous Materials and Waste
Management Division - Bldg B2
4300 Cherry Creek Drive South
Denver CO 80222-1530

Citizens Advisory Board
9035 N Wadsworth Parkway
Suite 2250
Westminster CO 80021

Standley Lake Library
8485 Kipling Street
Arvada CO 80005

U S Environmental Protection Agency
Superfund Records Center
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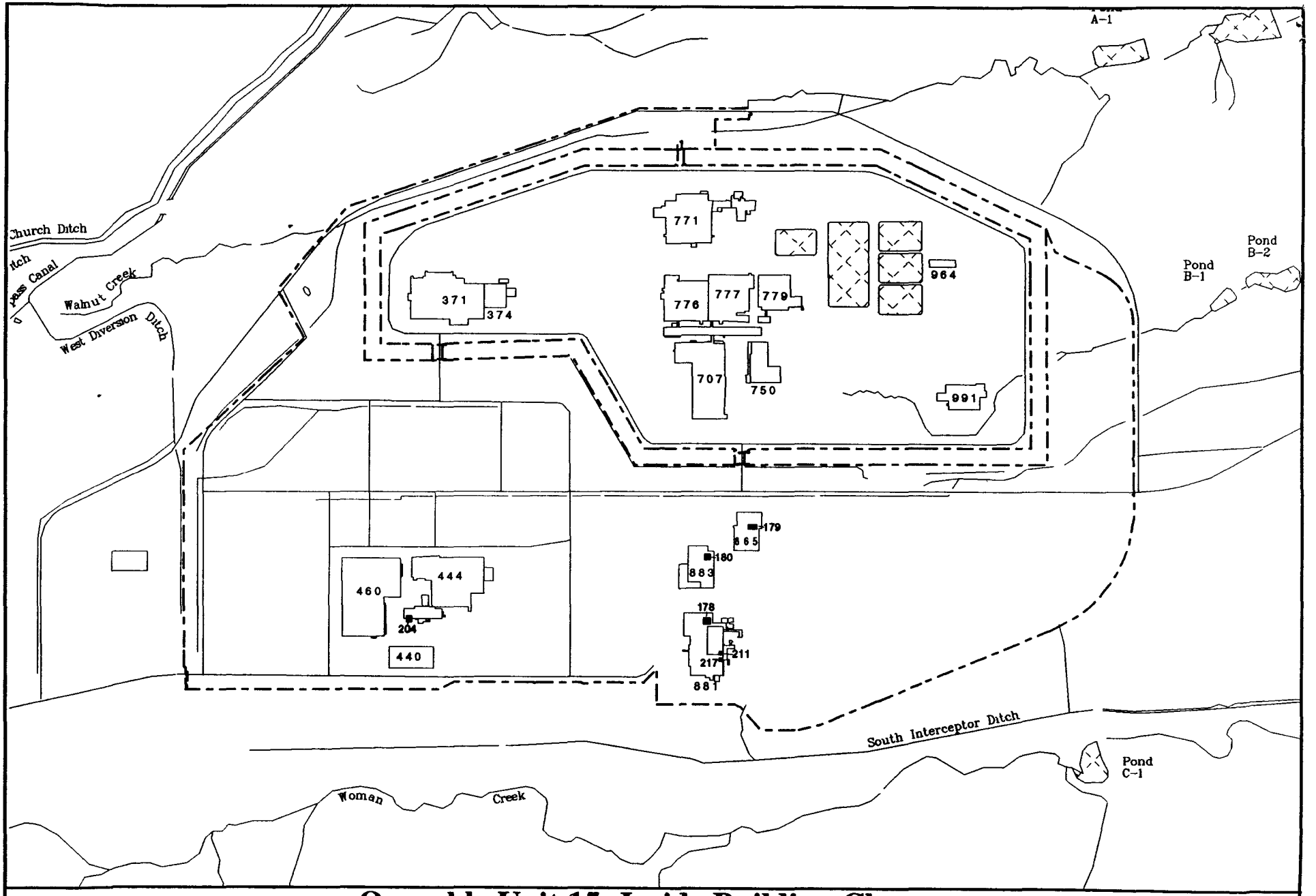
999 18th Street
Denver CO 80202-2466



Operable Unit 15: Inside Building Closures

Streams ditches and other drainage features

Security fence

Paved road

Individual Hazardous Substance Sites (IHSS)

Lakes and ponds

Buildings or other structures

DATA SOURCE
Individual Hazardous Substance Sites derived from the Historical Release Report and Operable Unit Workplan

0 1000

Rocky Flats Environmental Technology Site — May 1995